

FIG. 1A

ctcgcctcctcctacttggtataactgtggttaattcttagagctaatacatgccgacgggc 60
gctgaccccccttcgcggggggggatgctgcatcttatcagatcaagaccaaccgggtcagc 120
ccctctccggccccggcgggggggcgggcgccggcggtttggtgactctagataacctc 180
gggccgatcgacgccccccgtggcgggcgacgaccattcgaacgtctgccctatcaact 240
ttcgatggtagtcgcgtgcctaccatggtgaccacgggtgacggggaatcagggttcga 300
ttccggagagggagcctgagaaacggctaccacatccaaggaaggcagcaggcgcgcaaa 360
ttaccactcccgagggtggcgggcgcccatcttgcggaaggggggatcaggaagtgcg 420
gaccgcgggcgggcgggcgggcgggcgggcgggcgaggcccgagcgcaggccggaggctc 480
ccggccccggcccccgagcgagcgaggatgcagcagccgcagccgcagggg 540
cagcagcagccggggcgggggcagcagctggggggccaggggcgcgccggggggcgggg 600
ggcgggcccgggggggggccggggcgggggccctgcctgaggcgagagctgaagctgctc 660
gagtcctatcttcaccgcggccacgagcgcttcgcattgccagcgctgcctggaacgag 720
ctgagctgcgagttcctgctggctggggccggaggggcgggggcgggggcgcccgga 780
ccgcatctccccccacgggggtcggtgcctggggatcctgtccgcatccactgcaacatc 840
acggagtcataccctgctgtgcccccatctggtcgggtggagtcctgatgacctaaacttg 900
gctgctgtcttgagagggtggtggacataaagaaaggaatactctgctattgcagcat 960
ctgaagaggatcatctccgacctgtgtaaaactctataacctccctcagcatccagatgtg 1020
gagatgctggatcaacccttgccagcagagcagtcacacaggaagacgtgtcttcagaa 1080
gatgaagatgaggagatgcctgaggacacagaagacttagatcactatgaaatgaaagag 1140
gaagagccagctgagggcaagaaatctgaagatgatggcattggaaaagaaaacttgcc 1200
atcctagagaaaattaaaaagaaccagaggcaagattacttaaatggtgcagtgctggc 1260
tcggtgcaggccactgaccggctgatgaaggagctcagggatataatccgatcacagagt 1320
ttcaaaggcgaaactatgcagtcgaactcgtgaatgacagctctgatgattggaatgtc 1380
aaactcctcaaagttgaccaggacagcgctttgcacaacgatctccagatcctcaaagag 1440

1005449.1.2004

FIG. 1B

aaagaaggagccgacttcattctacttaacttttctcttaagataactttccctttgac 1500
ccaccatttgtcaggggtgtgtctccagtcctctctggagggtatgttctggcgaggagg 1560
gccatctgcatggaacttctcaccaaacagggtggagcagtgccctactccatagagtca 1620
gtgatcatgcagatcagtgccacactgggtgaaggggaaagcacgagtgagtttgagcc 1680
aacaaaatctcaatacagctctgacaagagcacagcagtcctacaagtccttgggtgcagatc 1740
cacgaaaaaacggctggtacacacccccaaaagaagacggctaaccctggagtatcacc 1800
cttctctccctccccaggcaccactggaccaattacctttgaatgctgtatttggatctca 1860
cgctgcctctgtggttccctccctcatttttctggacgtgatagctctgcctattgcag 1920
gacaatgatggctattctaaacgctaaggaaaaaaacaaacagaaactggttcaagta 1980
ctcaagactgacttacagaccaaccaaccaccttgctggaacccttgctagcaggcattc 2040
ttataaaagaaactttcgagcctccttatattgctggaactcagctgtgctccagacta 2100
gagcctccttacctatgctatggatttttaatttttctcttatttcatgtacactgc 2160
tttttttggttacagtgtatgatggatgtgtatgaaaaaatgtatccttgggaaaacaa 2220
ttacagtttgttaatttgaaaaaaaaaaaaaaaaa 2280

(SEQ ID NO:1)

FIG. 2A

CTCGCTCCTCTCCTACTTGGATAAAGTGTGGTAATTTAGAGCTAATACATGCCGACGGGC
GCTGACCCCTTCGCGGGGGGGGATGCGTCATTATCAGATCAAGACCAACCCGGTCAGC
CCCTCTCCGGCCCCGGCCGGGGGGCGGGCGCGGGCGGCTTTGGTGACTCTAGATAAAGCTC
GGGCGGATCGCACGCCCCCGCTGGCGCGACGACCCATTGCAACGCTCTGCCCTATCAACT
TTCGATGGTAGTCGCCGTGCTTACCATGGTGACACCGGTGACGGGGATCGGGGAATCAGGGTTT
TTCCGGAGAGGGAGCCTGAGAAACGGCTACCACTCCAAGGAAGGCAGAGCGCGCGCAAA
TTACCACTCCCGGAGGTGGCGGGCGGCGCATCTTGGCGAAGGGGGGATCAGGAAGTGGC
GACCGCGCGGGCGCGCGGGCGGGCGGGCGGGCGGAGCCCGGAGCGAGCGCGGAGGCTC
CCGGCCCCCGGCCCGGAGCGGAGCGGAGCGGAGGATGTCAGCAGCCGACGCCGACGGG
M Q Q P Q P Q G
CAGCAGCAGCCGGGGCGGGGCGAGCTGGGGGGCCAGGGGGCGCGCGCGGGGGCCGGG
Q Q Q P P G P G Q Q L G G Q G A A P G A G
GGCGGCCCGGGGGGGGCCCGGGCGCGGGGCCCTGCTGAGGCGAGAGCTGAAGCTGCTC
G G P G G G P G P G P C L R R E L K L L
GAGTCCATCTTCCACGCGGGCCAGAGCGCTTCCGATTGCGAGCGCTGCTGGACGAG
E S I F H R G H E R F R I A S A C L D E
CTGAGCTGCGAGTTTCTGCTGGCTGGGGCGGAGGGGGCGGGGGCGGGGGCGCGCCCGGA
L S A C E F L L A G A G A G A G A A P G
CGCATCTCCCCCAGGGGGTGGTGCTGGGGATCTGTCCGCATCCACTGCAACATC
P H L P P R G S V P G D P V R I H C N I
ACGGAGTCATACCTGCTGTGCCCCCATCTGGTGGTGAGTCTGATGACCCCTAAGTGT
T E S Y P A V P P I W S V E S D D P N L
GCTGCTGTCTTGGAGAGGCTGGTGGACATAAAGAAAGGGAATACTCTGCTATTGCGAGCAT
A A V L E R L V D I K K G N T L L L Q H
CTGAAGAGGATCATCTCCGACCTGTGTAAACTCTATAACCTCCCTCAGCATCCAGATGTG
L K R I I S D L C K L Y N L P Q H P D V
GAGATGCTGGATCAACCCTTCCAGCAGAGCAGTGCAACAGGAAGAGCTGTCTTCAGAA
E M L D Q P L P A E Q C T Q E D V S S E
GATGAAGATGAGGAGATGCTGAGGACACAGAAGACTTAGATCACTATGAAATGAAAGAG
D E D E E M P E D T E D L D H Y E M K E
GAAGAGCCAGCTGAGGGCAAGAAATCTGAAGATGATGGCATTGGAAAAGAAAATCTGGCC
E E P A E G K K S E D D G I G K E N L A
ATCTAGAGAAAATTAAGAAAGAACAGAGGCAAGATTAATTAATGGTGCAGTGTCTGGC
I L E K I K K N Q R Q D Y L N G A V S G
TCGGTGCAGGCCACTGACCGGCTGTGAAGGAGCTCAGGGATATATACCGCATCAGAGT
S V Q A T D R L M K E L R D I Y R S Q S
TTCAAAGCGGAAACTATGCACTGCAAGTGTGAATGACAGTCTGTATGATTGGAATGTC
F K G G N Y A V E L V N D S L Y D W N V
AAACTCCTCAAAGTTGACGAGGACAGCGCTTTCACACAGATCTCCAGATCTCTCAAAGAG
K L L K V D Q D S A L H N D L Q I L K E
AAAGAAGGAGCCGACTTCACTTACTTAACCTTTTCCTTAAAGATAACTTTCCCTTTGAC
K E G A D F I L L N F S F K D N F P F D
CCACCATTTGTGAGGGTTGTGTCTCCAGTCTCTGAGGGGATGTCTTGGCGGGAGGG
P P F V R V V S P V L S G G Y V L G G G
GCCATCTTGTGAAGTCTTCAACAAACAGGGCTGGAGCAGTGCCCTACTCCATAGAGTCA
A I C M E L L T K Q G W S S A Y S I E S
GTGATCATGCAAGTCCACACTGGTGAAGGGGAAGCACGAGTGCAGTTTGGAGCC
V I M Q I S A T L V K G K A R V Q F G A

1000549.102901

FIG. 2B

AACAAATCTCAATACAGTCTGACAAGAGCACAGCAGTCTTACAAGTCCTTGGTGCAGATC
 N K S Q Y S L T R A Q Q S Y K S L V Q I
 CACGAAAAAACGGCTGGTACACACCCCCAAAAGAAGACGGCTAACCCCTGGAGTATCACC
 H E K N G W Y T P P K E D G *
 CTTCCTCCCTCCCCAGGCACCACTGGACCAATTACCTTGAATGCTGTATTGGATCTCA
 CGCTGCCTCTGTGGTTCCCTCCCTCATTTTCCTGGACGTGATAGCTCTGCCTATTGCAG
 GACAAATGATGGCTATTCTAAACGCTAAGGAAAAAAACAAACACAGAAGCTTTTCAAGTA
 CTCGAAGACTGACTTACAGACCAACCAACCACCTTGCTGGAACCCCTTGCTAGCAGGCATT
 TTATAAAGAAACTTTGAGCCTCCTTATATTGCTGGAACCTCAGCTGTGCTCCAGACTA
 GAGCCTCCTTACCTATGCTATGGATTTTAAATTTATTTTCTCTTATTTTATGTACACTGC
 TTTTTTGGTTACAGTGTATGATGGATGTGTATGAAAAAAATGTATCTTTGGGAAAACAA
 TTACAGTTTGTAAATTTGAAAAA

1005549.102001

FIG. 3

MQQPQPQGGQ	QPGPGQQLGG	QGAAPGAGGG	PGGGPGPGPC	40
LRRELKLLS	IFHRGHERFR	IASACLDELS	CEFLLAGAGG	80
AGAGAAPGPH	LPPRGSVPGD	PVRIHCNITE	SYPAVPIWS	120
VESDDPNLAA	VLERLVDIKK	GNTLLQLHLK	RIISDLCKLY	160
NLPQHDPDEM	LDQPLPAEQC	TQEDVSSEDE	DEEMPEDEED	200
LDHYEMKEEE	PAEGKKSEDD	GIGKENLAIL	EKIKKNQRQD	240
YLNGAVSGSV	QATDRMLKEL	RDIYRSQSFK	GGNYAVELVN	280
DSLYDWNVKL	LKVDQDSALH	NDLQILKEKE	GADFILLNFS	320
FKDNFPFDPP	FVRVVSFVLS	GGYVLGGGAI	CMELLTKQGW	360
SSAYSIESVI	MQISATLVKG	KARVQFGANK	SQYSLTRAQQ	400
SYKSLVQIHE	KNGWYTPPKE	DG		422

(SEQ ID NO:2)

1005549.102904

FIG. 5A

RATL1d6 BLAST results/alignment w/ Drosophila protein

>GCGPROT:O46068 EG:25E8.2 PROTEIN.

Length = 394

Score = 369 bits (936), Expect = e-101

Identities = 194/403 (48%), Positives = 265/403 (65%), Gaps = 51/403 (12%)

Query: 41 LRRELKLESIFHRGHERFRIASACDELSCFEFLLAGAGGAGAGAAPGPHLPGRGSVPGD 100
L++E+K LE IF + HERF+I ++ +DEL C F+ G
Sbjct: 7 LKQEIKTLEKIFPKNHERFQILNSSVDELLCRFI-----DKNGK 45

Query: 101 PVRIHCNITESYPVPPPIWSVESDDPNLAALVLERLVDIKKNTLLQHLKRIISDLCKLY 160
IH NITE+YP+ PP+W ES++ ++ ++ L + + ++ + ++ +LC+L+
Sbjct: 46 RYDIHANITETYPSSPPVWFAESEETSVTNAVQILSNTNGRDNHVINQVGILLRELRLH 105

Query: 161 NLPQHDPDVEMLDQPLPAEQCTQEDVSSSEDE-----DEEMPEDTEDLDHYEM 206
N+P PD++ L PL + + E +EE D E+++
Sbjct: 106 NVPLPPDIDNLALPLQTPPPSASPLRCEQRPGGGGAGGGGGPHGNEETDSQEEIEDPIG 165

Query: 207 KEEPAEGKK-----SEDDGIGKENLAILEKIKKNQRQDYLNAGVSGSVQATD 254
+ E+ +EG + S+ D + E+LA LEK+++QRQDYL G+VSGSVQATD
Sbjct: 166 ESEQESEGDEDLPLEMDDVRSTSKKDDMEVHLATLEKLRSQRQDYLGKSGSVSVQATD 225

Query: 255 RLMKELRDIYRSQSFKGGNYAVELVNDSLYDWNVKKLVKVDQDSALHNDLQILKEKEGADF 314
RLMKELRDIYRS +FK Y++ELVN+S+Y+WN++L VD DS LH+DLQ+LKEKEG D
Sbjct: 226 RLMKELRDIYRSDAFKKNMYSIELVNESIYEWNI RLKSVDPDPSPLHSDQLMLKEKEGKDS 285

Query: 315 ILLNFSFKDNFPDFPPFVRVVPVLSGGYVLGGGAICMELLTKQGWSAYSIESVIMQIS 374
ILLN FK+ +PF+PPFVRV P++SGGYVL GGAICMELLTKQGWSSAY++E+VIMQI+
Sbjct: 286 ILLNLFKETYFPFPPFVRVVFIIISGGYVLIGGAICMELLTKQGWSAYTVEAVIMQIA 345

Query: 375 ATLVKGKARVQFGANKS---QYSLTRAQQSYKSLVQIHEKNG 413
ATLVKGKAR+QFGA K+ QYSL RAQQS+KSLVQIHEKNG
Sbjct: 346 ATLVKGKARIQFGATKALTQGGYSLARAQQSFKSLVQIHEKNG 388

1. **Introduction**
 2. **Background**
 3. **Methodology**
 4. **Results**
 5. **Discussion**
 6. **Conclusion**
 7. **References**
 8. **Appendix**
 9. **Index**
 10. **Table of Contents**
 11. **Abstract**
 12. **Keywords**
 13. **Subject Headings**
 14. **Summary**
 15. **Notes**
 16. **References**
 17. **Appendix**
 18. **Index**
 19. **Table of Contents**
 20. **Abstract**
 21. **Keywords**
 22. **Subject Headings**
 23. **Summary**
 24. **Notes**
 25. **References**
 26. **Appendix**
 27. **Index**
 28. **Table of Contents**
 29. **Abstract**
 30. **Keywords**
 31. **Subject Headings**
 32. **Summary**
 33. **Notes**
 34. **References**
 35. **Appendix**
 36. **Index**
 37. **Table of Contents**
 38. **Abstract**
 39. **Keywords**
 40. **Subject Headings**
 41. **Summary**
 42. **Notes**
 43. **References**
 44. **Appendix**
 45. **Index**
 46. **Table of Contents**
 47. **Abstract**
 48. **Keywords**
 49. **Subject Headings**
 50. **Summary**
 51. **Notes**
 52. **References**
 53. **Appendix**
 54. **Index**
 55. **Table of Contents**
 56. **Abstract**
 57. **Keywords**
 58. **Subject Headings**
 59. **Summary**
 60. **Notes**
 61. **References**
 62. **Appendix**
 63. **Index**
 64. **Table of Contents**
 65. **Abstract**
 66. **Keywords**
 67. **Subject Headings**
 68. **Summary**
 69. **Notes**
 70. **References**
 71. **Appendix**
 72. **Index**
 73. **Table of Contents**
 74. **Abstract**
 75. **Keywords**
 76. **Subject Headings**
 77. **Summary**
 78. **Notes**
 79. **References**
 80. **Appendix**
 81. **Index**
 82. **Table of Contents**
 83. **Abstract**
 84. **Keywords**
 85. **Subject Headings**
 86. **Summary**
 87. **Notes**
 88. **References**
 89. **Appendix**
 90. **Index**
 91. **Table of Contents**
 92. **Abstract**
 93. **Keywords**
 94. **Subject Headings**
 95. **Summary**
 96. **Notes**
 97. **References**
 98. **Appendix**
 99. **Index**
 100. **Table of Contents**
 101. **Abstract**
 102. **Keywords**
 103. **Subject Headings**
 104. **Summary**
 105. **Notes**
 106. **References**
 107. **Appendix**
 108. **Index**
 109. **Table of Contents**
 110. **Abstract**
 111. **Keywords**
 112. **Subject Headings**
 113. **Summary**
 114. **Notes**
 115. **References**
 116. **Appendix**
 117. **Index**
 118. **Table of Contents**
 119. **Abstract**
 120. **Keywords**
 121. **Subject Headings**
 122. **Summary**
 123. **Notes**
 124. **References**
 125. **Appendix**
 126. **Index**
 127. **Table of Contents**
 128. **Abstract**
 129. **Keywords**
 130. **Subject Headings**
 131. **Summary**
 132. **Notes**
 133. **References**
 134. **Appendix**
 135. **Index**
 136. **Table of Contents**
 137. **Abstract**
 138. **Keywords**
 139. **Subject Headings**
 140. **Summary**
 141. **Notes**
 142. **References**
 143. **Appendix**
 144. **Index**
 145. **Table of Contents**
 146. **Abstract**
 147. **Keywords**
 148. **Subject Headings**
 149. **Summary**
 150. **Notes**
 151. **References**
 152. **Appendix**
 153. **Index**
 154. **Table of Contents**
 155. **Abstract**
 156. **Keywords**
 157. **Subject Headings**
 158. **Summary**
 159. **Notes**
 160. **References**
 161. **Appendix**
 162. **Index**
 163. **Table of Contents**
 164. **Abstract**
 165. **Keywords**
 166. **Subject Headings**
 167. **Summary**
 168. **Notes**
 169. **References**
 170. **Appendix**
 171. **Index**
 172. **Table of Contents**
 173. **Abstract**
 174. **Keywords**
 175. **Subject Headings**
 176. **Summary**
 177. **Notes**
 178. **References**
 179. **Appendix**
 180. **Index**
 181. **Table of Contents**
 182. **Abstract**
 183. **Keywords**
 184. **Subject Headings**
 185. **Summary**
 186. **Notes**
 187. **References**
 188. **Appendix**
 189. **Index**
 190. **Table of Contents**
 191. **Abstract**
 192. **Keywords**
 193. **Subject Headings**
 194. **Summary**
 195. **Notes**
 196. **References**
 197. **Appendix**
 198. **Index**
 199. **Table of Contents**
 200. **Abstract**
 201. **Keywords**
 202. **Subject Headings**
 203. **Summary**
 204. **Notes**
 205. **References**
 206. **Appendix**
 207. **Index**
 208. **Table of Contents**
 209. **Abstract**
 210. **Keywords**
 211. **Subject Headings**
 212. **Summary**
 213. **Notes**
 214. **References**
 215. **Appendix**
 216. **Index**
 217. **Table of Contents**
 218. **Abstract**
 219. **Keywords**
 220. **Subject Headings**
 221. **Summary**
 222. **Notes**
 223. **References**
 224. **Appendix**
 225. **Index**
 226. **Table of Contents**
 227. **Abstract**
 228. **Keywords**
 229. **Subject Headings**
 230. **Summary**
 231. **Notes**
 232. **References**
 233. **Appendix**
 234. **Index**
 235. **Table of Contents**
 236. **Abstract**
 237. **Keywords**
 238. **Subject Headings**
 239. **Summary**
 240. **Notes**
 241. **References**
 242. **Appendix**
 243. **Index**
 244. **Table of Contents**
 245. **Abstract**
 246. **Keywords**
 247. **Subject Headings**
 248. **Summary**
 249. **Notes**
 250. **References**
 251. **Appendix**
 252. **Index**
 253. **Table of Contents**
 254. **Abstract**

```

>CGPROT:Q93571 F25H2.8 PROTEIN.
  Length = 471
  Score = 317 bits (805), Expect = 6e-86
  Identities = 178/397 (44%), Positives = 247/397 (61%), Gaps = 49/397 (12%)

Query:   41  LRLEKLLLESIFRGRHERFRIASACLDLSCFLLAGAGGAGAGAAPGPHLPPRGSSVPGD 100
          L+ ++ ++LE +F + H RF+I SA +DELS +F+ A   G
Sbjct:   7   LKEDIQVLEKLFPPKNHNRQFQLSASVDELSGMKFINAENKG----- 46

Query:  101  PVRHICNLTESYPAPVPIIWSVESDD- PNLAIAVLERLVDIKKQTLTLLQHLKRIISDLCKL 159
          + ++ NI E+YP PPIW ESDD P + +LRL + ++ +T +L + R++SDLC
Sbjct:  47  -IIVTANIQENYPRQPIIFSESDDVPVIGMSLQRLTETEE-STNLIHQVHRLVSDLCSE 104

Query:  160  YNL-----PQHDPVE-----MLDQPLPAEQCTQEDVSSEDEDEEMPEDTE 199
          YNL P D++ +P+ +V +D+EE ED +
Sbjct: 105  YNLQMCPLELPQIAPPVRDDIDISGRGSDISDTSESPIDDDMAGDGEVDDDEEEDDEED 164

Query:  200  -DLDHYEMKEEPEAGKKSDEDDGIGKENLAILEKIKKNQRQDYLNGAVSGSVQATDRLMK 258
          D++ EM EE+P D G+ KE L +L+K+ K RQ +L+G V GS+ ATDRLMK
Sbjct: 165  GDTEIVEMAEDDPTS---QHDVGVSKEGLDMLDKVSKINRQQLHDGKVQGSITATDRLMK 221

Query:  259  ELRDIYRSQSFKGNGYAVELVND-SLYDWNVKLLKVDQDSALHNDLQILKEKEGADFILL 317
          E+RDI+RS+ FK G Y EL + +LYW +KL KVD+DS L D++ LK+ D +L
Sbjct: 222  BIRDIHRSSEHPKNGIYTFLEKEKENLYQWTKLHKVDEDSPLFEDMKKLKDHNDQHLFL 281

Query:  318  NFSFKDNFPFPPYFVRVSVPLVSGGYVLGGGAICMELLTKQGWSSAYSIESIVMQLISATL 377
          +F+F + FP DDPFVRVVP +G + +VLGGGAICMELLTKQGWSSAYSIES I+QI+ATL
Sbjct: 282  SFTFNEKFPDPPFVRVVPAPHINQGVFLGGGAICMELLTKQGWSSAYSIESCILQIAATL 341

Query:  378  VKGKARVQFGA-NKSQYSLTRAQSSYKSLVQIHEKNG 413
          VKG+AR+ F A + S YS+ RAQSS+KSL QIH K+G
Sbjct: 342  VKGRARISDFDAKHTSTYSMAQAQSSFKSLQQIHAQSG 378

```


FIG. 6

Relative Expression of RATL1d6

